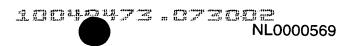
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Int. pat. appln. no. PNL00/00569 Our letter of 20 September 2001



**EPO - DG 1** 

2 1, 09, 2001

## Amended claims



- 1. A vaccine or medical preparation comprising a protease maturation protein of S. pneumoniae comprising an amino acid sequence as shown in fig 1B, and/or a fragment thereof and/or a homologous and/or a functionally homologous protein or protein fragment thereof for the treatment of microbial infections.
- 2. The vaccine or medical preparation according to claim 1 for the treatment of S. pneumoniae.
- The vaccine or medical preparation according to claim 1 or 2, further comprising a suitable adjuvant or carrier.
- The vaccine or medical preparation according to anyone of the claims 1-3 wherein said protein is the protein maturation protein from S pneumoniae Ft231 or EF3296.
- 5. The vaccine or medical <u>preparation</u> according to anyone of the claims 1-4
  wherein said fragment comprises an anchoring fragment, an antigenic fragment or a
  functional equivalent thereof or a functional equivalent of a receptor binding site or an
  antibody binding site.
  - The vaccine or medical preparation according to anyone of the claims 1-5 wherein said protein or said fragment comprises a purified, recombinant or synthetic protein or fragment thereof.
  - 7. The vaccine or medical preparation according to anyone of the claims 1-6 wherein said fragment comprises at least 8 amino acids.
  - 8. Method for the preparation of a vaccine against S. pneumoniae comprising the steps of:
- a. isolating a protease maturation protein of S. pneumoniae comprising an amino acid sequence as shown in fig 1B, or a fragment thereof or a recombinant or synthetic protein or fragment thereof or homologous or functionally homologous protein or fragment thereof; and
- b. combining the protein or the fragment thereof obtained under (a) with a suitable carrier or adjuvant.

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- 9. Method for obtaining an antibody against the protease maturation protein of *S. pneumoniae*, the method comprising the steps of isolating protease maturation protein comprising an amino acid sequence as shown in fig 1B or a fragment thereof and/or a homologous and/or a functionally homologous protein or protein fragment thereof, and raising antibodies against said protein or fragment thereof.
- 10. Antibody comprising opsonophagocytic activity obtainable by the method according to claim 9.
- 11. Use of a protease maturation protein of S. pneumoniae comprising an amino acid sequence as shown in fig 1B, or a fragment thereof and/or a homologous and/or a functionally homologous protein or protein fragment thereof, for the preparation of a vaccine for the treatment or prophylaxis of a S. pneumoniae infection.
- 12. Use of a protease maturation protein of S. pneumoniae comprising an amino acid sequence as shown in fig 1B, or a fragment thereof or a recombinant or synthetic protein or fragment thereof as a carrier.
- 38. Method of treatment of a S. pneumontae infection comprising administering a vaccine according to claims 1-7.
- 14. Method for the vaccination of a maximal against an infection of S. pneumoniae comprising administering a suitable dose of a vaccine according to anyone of the claims 1-7.
- 15. Use of a nucleic acid sequence coding for a protease maturation protein comprising an amino acid sequence as shown in fig 1B, or a fragment thereof and/or a homologous and/or a functionally homologous protein or protein fragment thereof, for obtaining a recombinant protease maturation protein or fragment thereof.

  16. Cell containing a recombinant nucleic acid sequence or a vector encoding for
- protease maturation protein comprising an amino acid sequence as shown in fig 1B, or a fragment thereof and/or a homologous and/or a functionally homologous protein or protein fragment thereof.
  - Recombinant protease maturation <u>protein comprising an amino acid sequence as</u>
    shown in fig 1B, or fragment thereof and/or a homologous and/or a functionally
- 30 <u>homologous protein or protein fragment thereof</u>, obtainable through the expression of a gene sequence encoding for said protein in a suitable vector.
  - 18. Use of protease maturation protein of S. pneumoniae comprising an amino acid sequence as shown in fig 1B, and/or a fragment thereof and/or a homologous and/or a

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functionally homologous protein or protein fragment thereof for the preparation of a medicament for the treatment of diseases connected with S. pneumoniae infections.

19. Use of protease maturation protein of S. pneumoniae comprising an amino acid sequence as shown in fig 1B, and/or a fragment thereof and/or a homologous and/or a functionally homologous protein or protein fragment thereof for eliciting opsonophagocytic activity and/or in vivo immunisation and/or in vivo immune protection against S. pneumoniae.

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